CWA COMPLIANCE EVALUATION INSPECTION REPORT
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 5

Purpose:
Compliance Evaluation Sampling Inspection

Facility:
nonresponsive

NPDES Permit Number: N/A

Date of Inspection: June 19, 2019

EPA Representatives:
Joan Rogers, Environmental Scientist 312-886-2785
Rogers.joan@epa.gov

State Representatives:
Doug VanNattan, Environmental Protection Engineer 217-557-8761
Doug.vannattan@illinois.gov

Facility Representatives:
nonresponsive Facility Manager nonresponsive

Inspector Signature: _____

Approver Name and Title: Ryan Bahr, Chief, Water Enforcement and Compliance Assurance Branch, Section 2

Approver Signature: _____

Approval Date: 8/13/19

1. BACKGROUND

The purpose of this report is to describe, evaluate and document the nonresponsive Swine Facility's compliance with the Clean Water Act (CWA) at its Loraine, Illinois facility on June 19, 2019. This inspection was performed pursuant to Section 308(a) of the Federal Water Pollution Control Act, as amended.

The nonresponsive Swine Facility is a swine finishing operation. Based on the number of hogs greater than fifty-five pounds, it is considered a Concentrated Animal Feeding Operation (CAFO). The facility has three barns in two different sites. The East Site consists of two barns, the North Barn and the South Barn. The West Site has the remaining third barn. The sites are approximately half a mile from each other but are on opposite sides of IL-336. Facility owners utilize the same land application equipment and fields to manage and spread the manure, so the sites are considered to be one operation.

There is a watershed boundary between the East Site and the West Site. There is an intermittent unnamed tributary that flows to the south on the west side of the East Site. This intermittent unnamed tributary has been dammed up just south of the facility to create a clean water pond. There is an outlet pipe in the pond to allow flow to leave the pond and continue south in the tributary. The flow continues in the intermittent unnamed tributary approximately 0.5 miles to perennial Woodville Branch. Woodville Branch flows 2.17 miles to perennial Thurman Creek and then another 4.8 miles to perennial South Fork Bear Creek. South Fork Bear Creek flows to Bear Creek which in turn flows to the Mississippi River.

At the West Site, flow from the production area would flow to the west approximately 0.2 miles to an intermittent unnamed tributary which flows southwest until it becomes a perennial unnamed tributary in 3.5 miles. The perennial unnamed tributary flows 1.4 miles before it flows into perennial Mud Creek. Mud Creek flows 4.1 miles before it reaches Bear Creek which flows to the Mississippi River. The Mississippi River is the first Traditional Navigable Water for the flow from either the East or West Site.

Bear Creek is on the 2016 impaired waters list and it is listed as impaired for Dissolved Oxygen (DO) and Fecal Coliform.

Illinois Environmental Protection Agency (IEPA) inspected the site on July 19, 2018. At that time, the facility was owned by the current facility manager, nonresponsive During that inspection, the IEPA inspector did not observe a discharge from the Mortality Compost Bin but did observe evidence that it had discharged process wastewater to the pond. IEPA recommended that the practices for the Mortality Compost Bin be modified to control the leachate.

2. SITE INSPECTION

Table 1: Site Entry and Opening Conference

Arrival Time:	10:50 a.m.
Temperature:	70 °F.
Precipitation:	It rained heavily in the morning. Quincy Regional Airport recorded 0.88 inches of rain.
Presented credentials?	Yes.
Credentials presented to whom and at what time?	[redacted] Facility Manager.
Was an opening conference held? With whom? Yes, with the facility manager.	
If photographs or documents were taken, does the facility consider any to be Confidential Business Information (CBI)?	No.
Which information does the facility consider to be CBI?	N/A.
EPA vehicle parked in approved location?	Yes.
Location where EPA vehicle was parked?	Outside the office.
Disposable boots worn?	Yes.
Other bio-security measures taken:	State veterinarian was contacted prior to the inspection. EPA inspector has not been on any other animal agriculture facilities in previous week.

2.1 Records Review (The following Records Review tables reflect information provided after the walk-through of the facility, unless otherwise noted.)

Table 2: Documents

Checklist(s) Used
R5 Boilerplate Inspection Report as CAFO Inspection Checklist.
Facility Documents Reviewed:
Nutrient Management Plan.

Table 3: Facility Description

Type of Animal	Number of Animals	Capacity	Type of Confinement
Swine > 55 pounds	[redacted]	[redacted]	Swine barns
Minimum Number of Animals in previous 5 years:			[redacted]
Maximum Number of Animals in previous 5 years:			[redacted]
Number of Animals that are stabled/confined and/or fed/maintained for 45 days or more in previous 12 months:			Same as listed above.
Amount of Liquid Manure Generated per year:			1.8 million gallons.

Amount of Solid Manure Generated per year:	None.
(Illinois Only) Name of Certified Livestock Manager for facility: (if 300 animal units or greater):	nonresponsive
(Illinois Only) If 1000 < AU < 5000 is a general waste management plan maintained at the facility?	Yes.
(Illinois Only) If AU > 5000 has a general waste management plan been submitted to the IDOA?	N/A.
Does the facility have an NPDES Permit?	No.
SIC or NAICS code:	0213.
CAFO Designation/Defined Date (If a designated CAFO)	Defined as a CAFO based on the number of animals.
CAFO Designation/Defined Reason (If a designated CAFO)	Defined as a CAFO based on the number of animals.
Do animals have direct access to WOUS?	No.
Are crops, vegetation, forage growth, or post harvest residues sustained in the normal growing season over any portion of the lot or facility where animals are kept?	No.
What is the area (acres) of the production area?	17.
What is the area (acres) of the pasture?	N/A.
How many employees (not counting family members)?	2.
Other facilities under common ownership (name and address):	
East Site: 40.190N, 91.160W.	
West Site: 40.195N, 91.169W.	

Table 4: Livestock Waste Storage

Type of Storage	Storage Capacity	Type of Liner	Depth Markers Present	Last Time Waste was Removed	Amount of Waste Removed	Days of Storage
3 Under Barn Pits	1 million gallons each	Concrete	No	Fall 2018	1 million gallons	Approximately 18 months

Records at site of storage structure design?	No.
Is manure stored for the short term?	No.
Are records kept of the level of manure in the storage structures?	Yes. The levels are measured one time per month and written on a calendar.
Do the facility personnel inspect and keep records of all diversion devices?	N/A.
Do the facility personnel inspect and keep records of all impoundments?	N/A.

Do the facility personnel inspect and keep records of all the water lines?	Pond water is used for drinking.
Do the facility personnel perform routine visual inspections and keep records of the production area?	EPA did not ask.
Does the waste storage system have a managed outfall or discharge point?	No.
Has the facility had any documented discharges of livestock waste to surface water in the past year?	EPA did not ask.
Are there safety devices installed around any manure storage ponds?	N/A.

Table 5: Livestock Waste Management

Describe the way manure is collected and disposed of at the facility:	
Manure is stored in pits beneath the barns and land applied with a drag line. The manure is agitated before application and the manure is injected during land application.	
Describe the way used bedding is collected and disposed of at the facility:	
No bedding is used.	
Are mortality records kept?	Yes.
Describe the way mortalities are managed at the facility:	
Mortalities are put into the composter and rotated through three bays. Sawdust and tree shavings are used as a carbon source for composting. The compost material is never land applied as it disintegrates.	
What type of method is used to provide drinking water for the animals?	Nipple waterers provide pond water to the hogs.
Describe the way spilled drinking water is collected and disposed of at the facility:	
Spilled drinking water falls into the pits and is handled with the manure.	
Describe the way mist cooling water is collected and disposed of at the facility:	
No mist cooling system is used.	
Describe how chemicals are stored and how used or spilled chemicals are collected and disposed of at the facility:	
No chemicals are used or stored at the facility.	
Describe the way water that has been used to wash/flush barns is collected and disposed of at the facility:	
The barns are washed two times per year with water from the pond. The wash water falls into the pits and is land applied with the manure.	
Describe where water comes from that is used to clean and/or flush. (Wells, city, etc.)	
Water for cleaning comes from the pond.	

Describe the way feed is contained and how runoff from feed is collected and disposed of at the facility:
Feed is contained in bulk bins and is not exposed to precipitation.
If a dairy, describe how process wastewater from the plate cooler water is collected and disposed of at the facility:
Not a dairy.
If a dairy, describe how process wastewater from the cleaning of the milking parlor is collected and disposed of at the facility:
Not a dairy.
If a dairy, describe how process wastewater from the cleaning of the milk tanks is disposed of at the facility:
Not a dairy.

If a dairy, how many times per day are cows milked?	N/A.

Table 6: Land Application and Disposal of Manure and Process Wastewater

Does the facility perform and keep records of the manure testing?	Yes, one time per year.
When was the last time a sample was taken of the manure and/or process wastewater?	Fall 2018.
Describe the process to take the manure and/or process wastewater sample.	After agitating the manure in the pit, a sample is dipped out of the manure in the pit.
Number of acres available for land application:	900.
Are land application records kept?	Land applications records are only kept on the tractor in the application software.
Who applies the manure and process wastewater to the fields?	Facility Manager.
Are weather conditions at time of application kept? (24 before – 24 after)	Forecasts are checked to make sure it is not going to rain within 72 hours of application.
Does the facility perform and keep records of the soil testing?	An outside company, RPM, performs the soil testing every two years.
Is manure transferred off-site to another party?	Yes.
Are manure transfer records maintained?	Yes.
Do facility personnel perform periodic inspection of land application equipment?	Yes.

Table 7: Receiving Surface Waters

Describe the surface flow pathways:	
East Site: There is an intermittent unnamed tributary that flows to the south on the west side of the East Site. This intermittent unnamed tributary has been dammed up just south of the facility to create a clean water pond. There is an outlet pipe in the pond to allow flow to leave the pond and continue south in the tributary. The flow continues in the intermittent unnamed tributary approximately 0.5 miles to perennial Woodville Branch. Woodville Branch flows 2.17 miles to perennial Thurman Creek and then another 4.8 miles to perennial South Fork Bear Creek. South Fork Bear Creek flows to Bear Creek which in turn flows to the Mississippi River. West Site: Flow from the production area would flow to the west approximately 0.2 miles to an intermittent unnamed tributary which flows southwest until it becomes a perennial unnamed tributary in 3.5 miles. The perennial unnamed tributary flows 1.4 miles before it flows into perennial Mud Creek. Mud Creek flows 4.1 miles before it reaches Bear Creek which flows to the Mississippi River. The Mississippi River is the first Traditional Navigable Water for the flow from either the East or West Site.	
How many months out of the year is there flow in the nearest surface water pathway:	12 months per year.
Are there any storm water pathways entering the facility?	No.
Are there any clean water ponds on site?	Yes, at the East Site.
What is the name of the first waterway that is identified as a Traditional Navigable Water (TNW) for surface flow from the facility?	Mississippi River.
Is the surface water pathway nearest to the facility considered to be ephemeral, intermittent or perennial?	The surface water pathway nearest to each site is intermittent.
Has the surface water pathway nearest to the facility been assessed for water quality?	The nearest surface water pathway to either site has not been assessed for water quality.

Table 8: Nutrient Management Plan

NMP on site?	Yes.
Date NMP Submitted:	September 12, 2016.
Planner Name/Company:	Henry Wilson, Carthage, Illinois.
Date that the NMP was last updated:	September 2018.
Storage Description:	Storage Description is in the NMP. States that each pit is 200' x 104' x 8'.
Amount of Manure Generated:	NMP lists the amount of manure generated as 1.95 million gallons.

Capacity of Storage:	Capacity of the storage is calculated as 166,400 sq. feet.
Duration of Storage:	Duration of storage is listed as 568 days of storage.
Amount of Spreadable Land:	NMP lists 323 spreadable acres.
Mortality Management Plan:	NMP states that the mortalities are to be composted.
Clean Water Diversion System:	NMP states that clean water is to be diverted away from the production area.
Direct Contact Prevention Plan:	NMP states that the animals are housed in barns.
Chemical Management Plan:	NMP has a chemical management plan.
Conservation Practices:	Conservation practices are shown on the map, like maintaining distance from water features during land application.
Manure Testing Protocols:	Manure testing protocols are documented in the NMP.
Soil Testing Protocols:	Soil testing protocols are documented in the NMP.
Land Application Protocols:	Land application protocols are documented in the NMP.
Additional NMP comments:	Soil test results are sent to Henry Wilson. EPA observed the soil test results. The total phosphorus results were typically in the 50 – 200 ppm range for the facilities land application fields.
Does the NMP reflect the current operational characteristics?	Facility manager stated that the NMP reflects the current operational characteristics.
Are the number of acres owned/leased consistent with what is listed in the NMP?	Yes.

Table 9: Land Application Records (details of the records reviewed)

Land application information:	There were no land application records on site. Land application records are maintained on the GPS on the truck. Perhaps also maintained within the John Deere software that is used for land application.

Table 10: Facility Records (details of the records reviewed)

Facility Record Information:	Other than the NMP, there were no other facility records on site to review during the inspection.

Table 11: NPDES Permit

Facility does not have an NPDES Permit.

2.2 Walkthrough of the Facility

EPA conducted the walkthrough portion of the inspection before the checklist was completed. See Attachment A – Inspection Photolog for photos and description of observations during the walkthrough.

2.3 Closing Conference and Post-Inspection

Table 12: Post Walk-Through

Was a closing conference held? With whom? Yes, with the facility manager.	
Were specific Areas of Concern discussed with facility personnel?	Yes.
Who were the Areas of Concern discussed with? The facility manager.	
Were any deficiencies or areas of concern addressed or fixed during the inspection? If so, list what was done. No.	
Compliance assistance materials given to facility personnel:	
Beneficial Uses of Manure and Environmental Protection, August 2015, U.S. EPA.	
Environmental Quality Incentives Program (EQIP), October 2013, USDA/NRCS.	
U.S. EPA small Business Resources Information Sheet, June 2017.	
Concentrated Animal Feeding Operations Final Rulemaking – Fact Sheet, October 2008, U.S. EPA.	
Most Common Conservation Practices for Confined Livestock, February 2009, USDA/NRCS.	
Tax Certification Program for Livestock Waste Management Facilities, August 2000, IEPA.	
Exit Time:	1:00 p.m.
Disposable Boots Left at Facility?	Yes.
Vehicle Washed after leaving facility?	Yes.
Date and Time that vehicle was washed:	June 20, 2019 at approximately 10:15 a.m.

Table 13: Waterway Documentation

List the pathway taken by EPA inspectors to document the waterway at the facility.
EPA observed the pond at the East Site and the black pipe that allows flow from the pond to continue in the intermittent unnamed tributary.

Table 14a: Sampling Information

Were samples taken?	Yes.
Were samples split with facility?	No.
Number of samples taken?	Two.
Was a trip blank created (done prior to entering the facility)?	Yes.
Identify which sample is the trip blank.	B01.
Were field duplicate samples taken (1 duplicate per 20 samples)?	No.
Identify which sample(s) is/are the field duplicate(s)	N/A.

Were equipment blanks taken (if more than one type of equipment was used to collect samples)?	No.
Identify which samples were equipment blanks.	N/A.
List chain of custody for fecal coliform samples:	EPA to PDC Laboratories, Inc.
List chain of custody for nutrient and general chemistry samples:	EPA to R5 Central Regional Laboratory.
Location where samples were preserved:	At the facility.
Name of people involved with sample preservation:	Joan Rogers
Time of sample preservation:	S01 and B01 at 11:33 a.m. S02 at 12:56 p.m.
Were samples shipped to a lab?	No.
Name/Address of shipping location:	N/A.
Date and time that samples were dropped off for shipping:	N/A.
Did all inspectors involved with the sampling sign the chain of custody?	Yes.
Weather conditions at the time of sample collection:	Light rain.
Camera name and type used to photograph sample collection:	Galaxy S8

Table 14b: Facility Sample Information

Number	Name	Location	Date	Time	Collector	Color/ Smell	Photo #	Photographer	Method of Collection	# of Sulfuric Acid Drops
S01	Compost Runoff	From the flow of process wastewater off the Mortality Compost Bin.	6/19/19	11:20 a.m.	Joan Rogers	Dark brown leachate from composting mortalities mixed with precipitation . Foul odor.	5, 6	Joan Rogers	Grab	20 drops.
B01	(b) (6)	At the EPA vehicle.	6/19/19	11:29 a.m.	Joan Rogers	Clear. No odor.	None	Joan Rogers	Grab	10 drops.
S02	Field Runoff	From the flow pathway in the crop field south of the West Site barn.	6/19/19	12:47 p.m.	Joan Rogers	Medium brown liquid with little odor.	21	Joan Rogers	Grab	20 drops

Name of Laboratory where fecal coliform/E.coli samples were taken: PDC Laboratories, Inc., 2231 West Altorfer Drive, Peoria, Illinois, 61615.

Name of Laboratory where nutrients and general chemistry samples were taken: R5 Central Regional Laboratory, 536 South Clark Street, Chicago, Illinois, 60605.

Table 15: Sample Results

Sample ID	Sample Name	Flags	Fecal Coliform (MPN/100ml)	Biochemical Oxygen Demand (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Nitrate-Nitrite N (mg/L)	Ammonia as N (mg/L)	Total Phosphorus (mg/L)	Total Dissolved Solids (mg/L)	Total Suspended Solids (mg/L)
S01	Compost Runoff		173,000	120 (K)	26.6 (L)	20.6	13.3	3.33	380	780
B01	(b) (6)		N/A	3 (K)	U (UJ)	U	U	U	U	U
S02	Field Runoff		3,410	7 (K)	4.73 (L)	14.2	0.29 (J)	0.92	258	408

MPN = Most Probably Number
K = The identification of the analyte is acceptable; the reported value may be biased high. The actual value is expected to be less than the reported value.
L = The identification of the analyte is acceptable; the reported value may be biased low. The actual value is expected to be greater than the reported value.
UJ = The analyte was not detected at or above the reported limit. The reported limit is an estimate.
J = The identification of the analyte is acceptable; the reported value is an estimate.

3. AREAS OF CONCERN

EPA observed these areas of concern:

A. Process wastewater was observed flowing from the Mortality Compost Bin to the pond.

B. Process wastewater was observed flowing off the crop field south of the barn on the West Site (identified as Field 5 in the NMP). The process wastewater flowed to a pond west of the crop field. The facility had a map showing that the field was used for land applications but did not have any records on site to show what nutrients had been applied or that any nutrients applied to the field were applied consistent with its Nutrient Management Plan.

4. LIST OF DOCUMENTS RECEIVED FROM FACILITY

EPA did not receive any documents from the facility.

5. ATTACHMENTS

A. Inspection Photolog

B. Aerial map of the East Site with barns, waterways and runoff pathway identified.

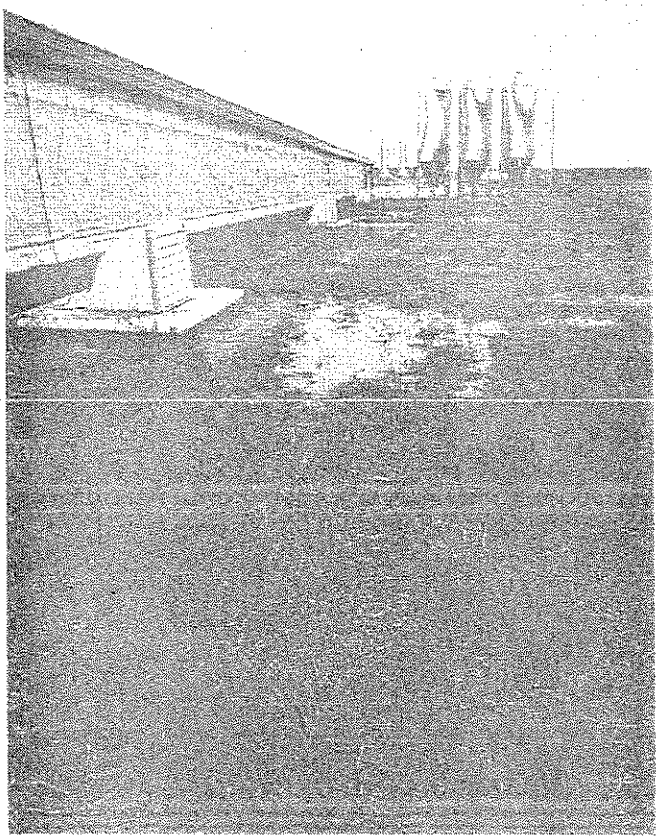
C. Aerial map and topographical map of the West Site with barn, waterway and runoff pathway identified.

D. Sample Analysis

(b) (6) Swine Facility
Attachment A - Inspection Photolog
EPA Inspection June 19, 2019
All photos taken by Joan Rogers, Environmental Scientist, U.S. EPA
Camera: Galaxy S8

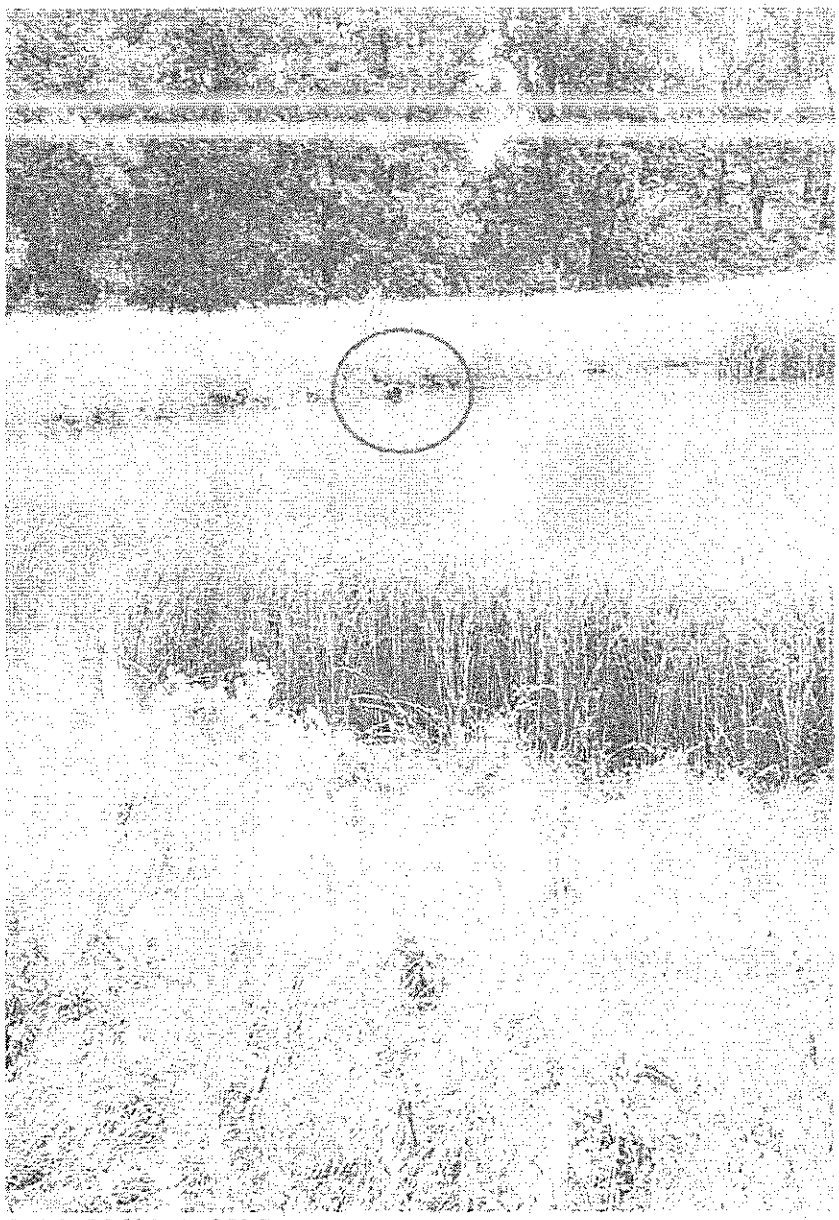
EPA arranged to meet the facility manager at the site at 11:00 a.m. after receiving permission via phone call to the owner to conduct an inspection. EPA arrived at 11:00 a.m. and informed the facility manager that they intended to do the walkthrough portion of the inspection first. The facility manager gave his approval and stated that he would not attend the walkthrough portion and that EPA was to meet him at his vehicle when done.

EPA began the walkthrough portion of the inspection at the East Site by walking south along the east side of the South Barn. It rained heavily the morning of the inspection and the rain was just ending when the walkthrough began. EPA observed standing water on the side of the barn and denuded vegetation that appeared to be nutrient burned from the pit fans. EPA did not observe any channelization from this side of the barn to waters of the U.S.



1: 20190619_110345
Description: Looking at the east side of the South Barn on the East Site. Vegetation appears to be nutrient burned from the pit fans. EPA did not observe any pathway of process wastewater from the side of the barn to a water of the U.S. on the day of the inspection.
Location: Southeast corner of South Barn on the East Site.
Camera Direction: North
Date/Time: June 19, 2019 11:03 a.m.

EPA then walked to the southwest corner of the South Barn on the East Site. Just southwest of the South Barn is a pond that formed from the damming up of an intermittent unnamed stream. An outlet pipe in the south berm of the pond allows flow from the pond to flow to the intermittent unnamed stream once the level reaches the height of the pipe.



2: 20190619_110535
Description: The pond southwest of the South Barn at the East Site has an outlet pipe in the southeast corner that allows flow from the pond to flow to the intermittent unnamed stream. Outlet pipe location is in the blue circle.
Location: Southwest corner of the South Barn at the East Site.
Camera Direction: South
Date/Time: June 19, 2019 11:05 a.m.

3: 20190619_110542
Description: Looking at the pond from south to northwest in photos 3 and 4.
Location: Southwest corner of the South Barn at the East Site.
Camera Direction: South
Date/Time: June 19, 2019 11:05 a.m.

4: 20190619_110547
Description: Looking at the pond from south to northwest in photos 3 and 4.
Location: Southwest corner of the South Barn at the East Site.
Camera Direction: Northwest
Date/Time: June 19, 2019 11:05 a.m.

EPA observed the Mortality Compost Bin. The facility utilizes three bays in the bin to compost the mortalities. According to the facility manager, the bays are never emptied and land applied as the material in the bays disintegrates at very high temperatures. The open face of the bin is to the south and there is no containment for the process wastewater from the Mortality Compost Bin. EPA observed dark colored liquid mixing with precipitation and flowing to the pond.

EPA walked back to the vehicles and informed the facility manager that they intended to take a sample. EPA prepared the sample bottles and walked back to the Mortality Compost Bin.

EPA took two movies at 11:13 a.m. to document the flow under the vegetation to the pond and took a sample from the dark colored liquid from the Mortality Compost Bin mixed with precipitation. EPA labeled this sample, S01, and named it "Compost Runoff." EPA took the sample at 11:20 a.m.

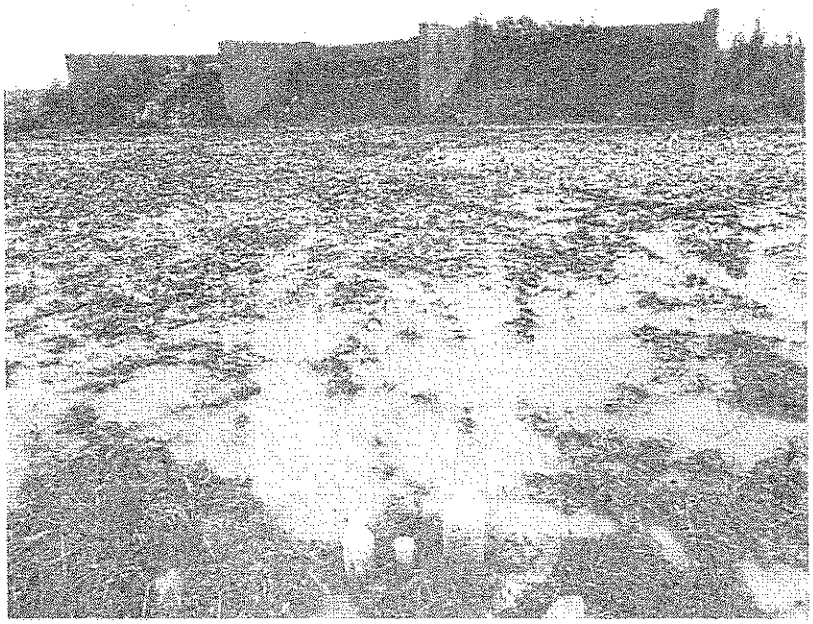
20190619_111202.mp4

Movie File #1 was taken at 11:13 a.m. and documents the flow of process wastewater to the pond through the vegetation.

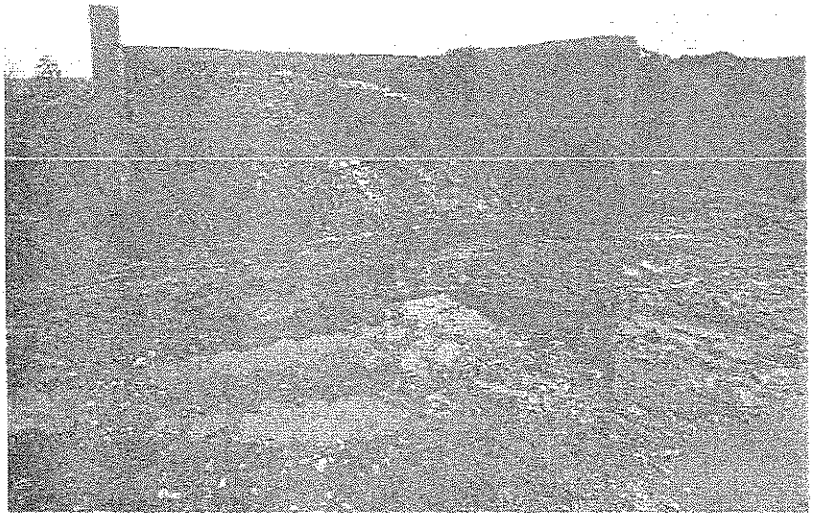
20190619_111319.mp4

Movie File #2 was taken at 11:13 a.m. and continues the documentation of the flow pathway from the Mortality Compost Bin to the channel that leads to the pond.

5: 20190619_112313
Description: Sample S01, named "Compost Runoff" was taken at 11:20 a.m. from the flow of process wastewater from the Mortality Compost Bin to the pond.
Location: South of the Mortality Compost Bin.
Camera Direction: North and down
Date/Time: June 19, 2019 11:23 a.m.

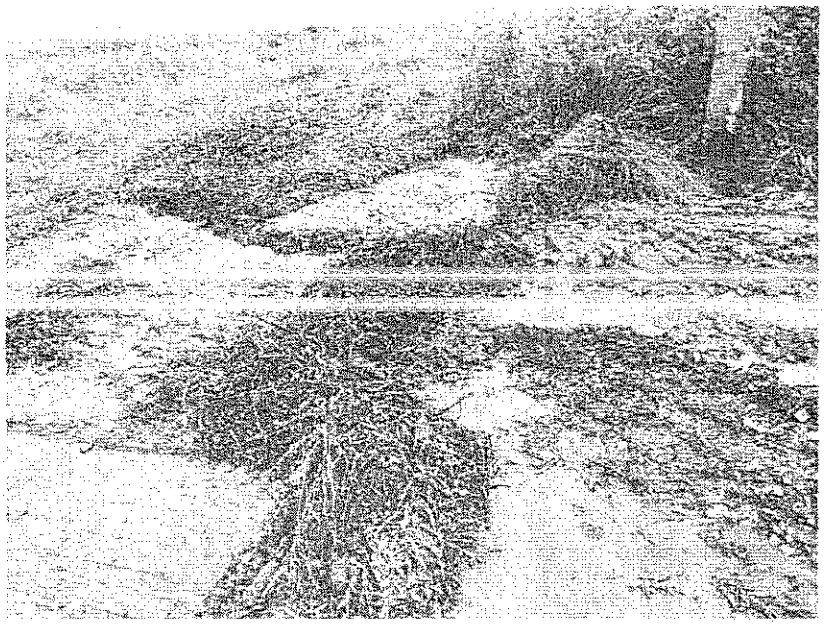


6: 20190619_112319
Description: Sample S01, named "Compost Runoff" was taken at 11:20 a.m. from the flow of process wastewater from the Mortality Compost Bin to the pond.
Location: South of the Mortality Compost Bin.
Camera Direction: North and down
Date/Time: June 19, 2019 11:23 a.m.

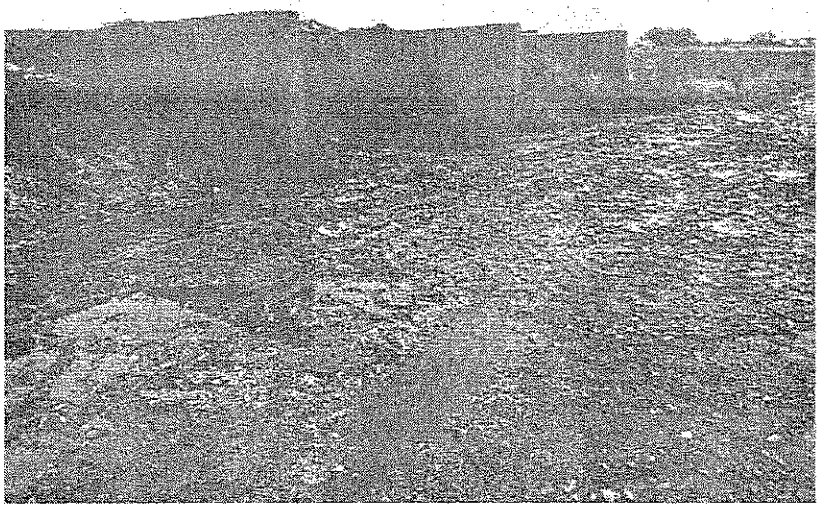


7: 20190619_112428
Description: There is no containment for the leachate from the mortalities at the Mortality Compost Bin.
Location: Southwest corner of the Mortality Compost Bin.
Camera Direction: Northeast
Date/Time: June 19, 2019 11:24 a.m.

The condition of the Mortality Compost Bin is the same as was documented by Illinois EPA in July 2018. EPA spoke with the owner of the facility on the morning of inspection and the owner stated that he had given instruction to the facility manager to have a cover installed over the Mortality Compost Bin immediately and believed that it had been purchased and delivered already.

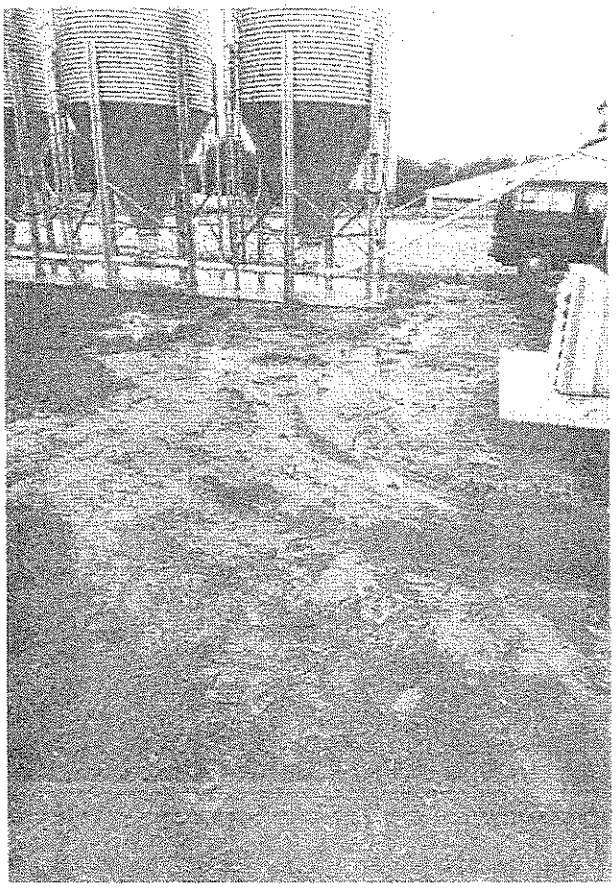


8: 20190619_112433
Description: Material on the ground has been scraped by the west side of the Mortality Compost Bin.
Location: Southwest corner of the Mortality Compost Bin.
Camera Direction: North
Date/Time: June 19, 2019 11:24 a.m.



9: 20190619_112437
Description: EPA observed dark colored liquid from the mortality piles in the bays of the Mortality Compost Bin mix with precipitation and flow to the south and to the pond.
Location: Southwest corner of the Mortality Compost Bin.
Camera Direction: Northeast
Date/Time: June 19, 2019 11:24 a.m.

EPA took sample S01 to the EPA vehicle and prepared a field blank, B01, named "(b) (6) at 11:29 a.m. The bottles with the nutrient samples were preserved with Sulfuric Acid at 11:33 a.m. and all samples were put on ice in a cooler. EPA then walked north along the west sides of both the South and North Barns on the East Site. EPA then walked east along the north side of the North Barn and then south to the office.



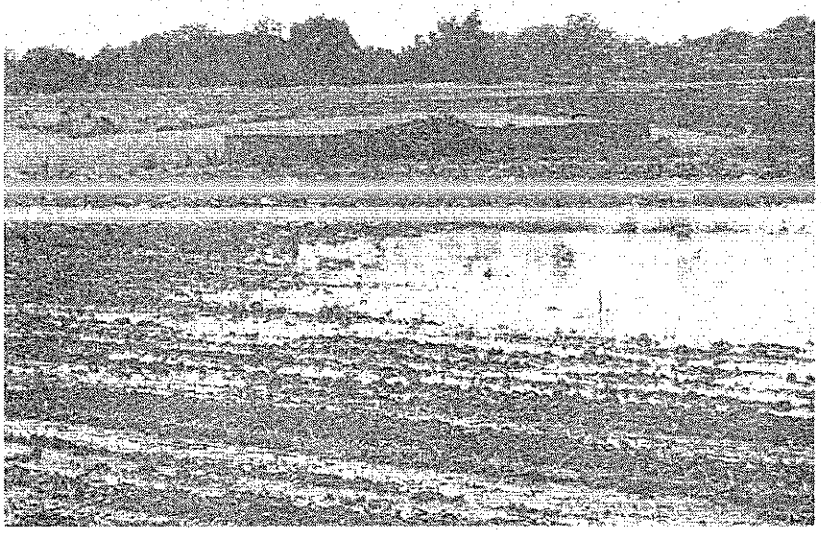
10: 20190619_113533
Description:
Location:
Camera Direction:
Date/Time: June 19, 2019 11:35 a.m.

At the southeast corner of the North Barn on the East Site, EPA observed a denuded area near the pit fan with flow channels that flowed to the south, to the facility parking area. EPA did not observe these channels reach the pond to the southwest. In fact, the parking area was flooded near the north side of the South Barn and did not appear to have an outlet.

EPA looked to the west and observed that a turkey vulture had landed on the Mortality Compost Bin.

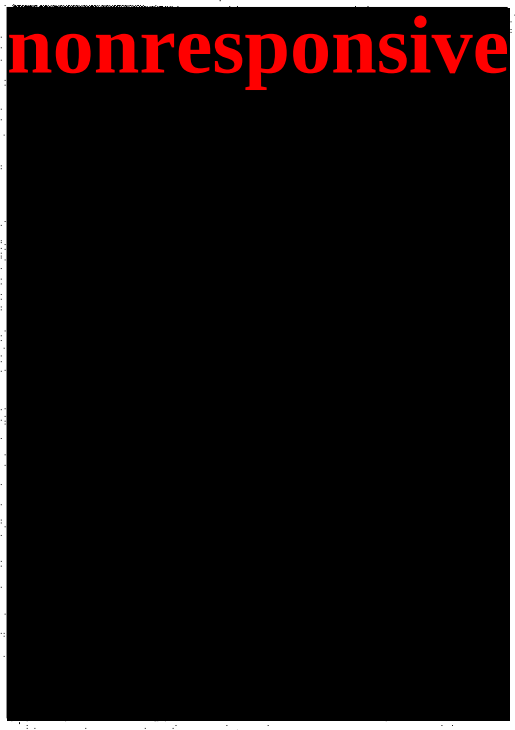
EPA then met with the facility manager to complete the EPA checklist and review documents. The information gathered during the checklist and records review portion of the inspection are detailed in the main portion of this inspection report.

Following completion of the checklist and records review portion of the inspection, EPA advised the facility manager that they intended to walk around the barn at the West Site. The facility manager gave his approval to do that but stated that he was not going to accompany EPA and was going to leave the facility.



11: 20190619_113806
Description: Turkey vulture on the Mortality Compost Bin.
Location: South side of the North Barn on the East Site.
Camera Direction: West
Date/Time: June 19, 2019 11:38 a.m.

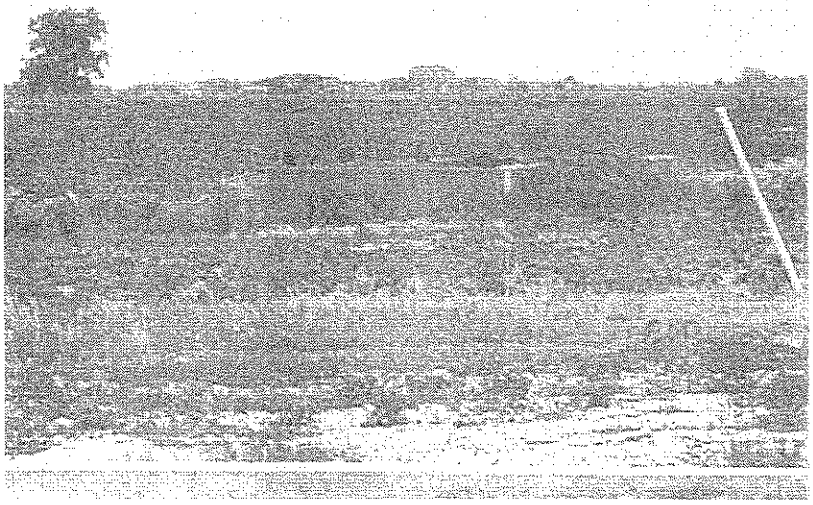
nonresponsive



12: 20190619_120631
Description: A photo of the map of the facility's south fields for land application from the facility's Nutrient Management Plan.
Location: In the facility office.
Camera Direction: Down
Date/Time: June 19, 2019 12:06 p.m.

When the checklist and records review portion of the inspection was concluded, EPA provided a closing conference to the facility manager. EPA gave the facility manager the compliance assistance materials and after summarizing each one, the facility manager dropped the materials into a garbage can.

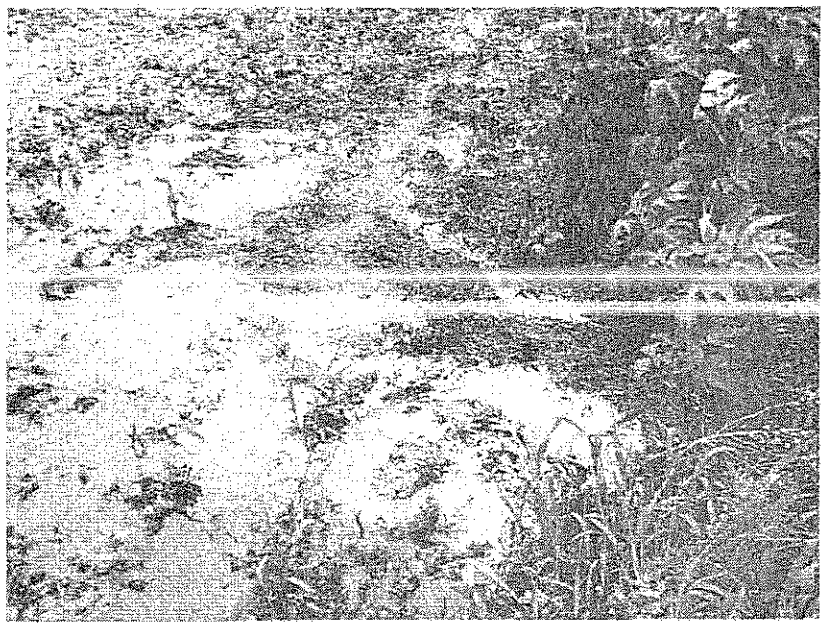
When EPA stepped outside, they noticed that there were now at least six turkey vultures on the Mortality Compost Bin.



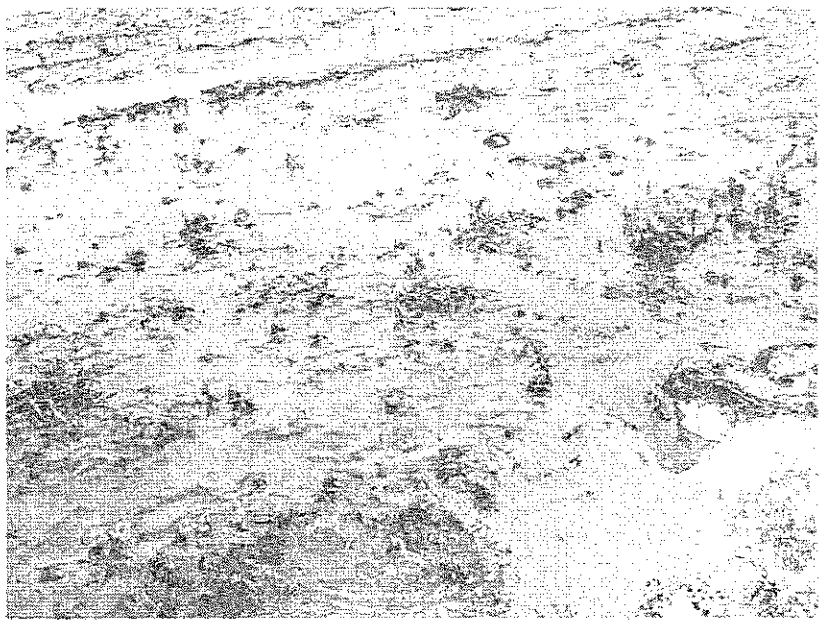
13: 20190619_122342
Description: At least six turkey vultures on the Mortality Compost Bin.
Location: South side of the North Barn on the East Site.
Camera Direction: West
Date/Time: June 19, 2019 12:23 p.m.

EPA removed disposable booties and left them in a garbage bag at the East Site, then drove to the West Site which is across IL-336 to the north.

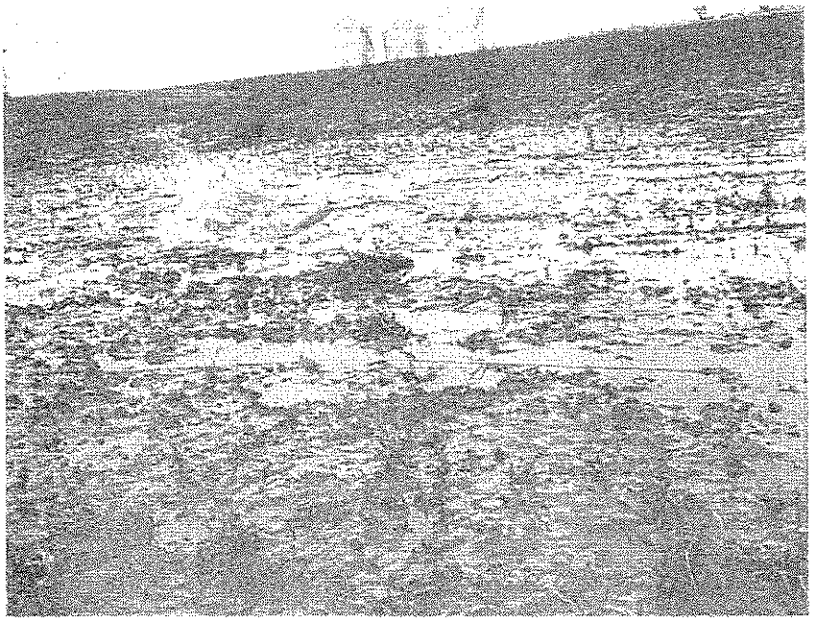
EPA donned new disposable booties and walked clockwise around the one building at the West Site starting at the northwest corner. At the southwest corner, EPA observed vegetation by the pit fans that appeared to be nutrient burned and a pathway for precipitation from below the pit fans through a crop field just to the south of the barn and then to the west to the fenceline for the crop field. The flow in the pathway was lighter in color than the soil and crops and flowed to the fenceline on the east side of the crop field. EPA walked south along the fenceline and observed light brown and white foam and solids on the top of the liquid in the pathway. The foam and solids appeared to have flowed from the barn to the fenceline. On the other side of the fence was a pond and EPA documented the flow from this pathway at the fenceline to the pond with photos. EPA did not cross to the other side of the fenceline because it was not known who the owner of that property was.



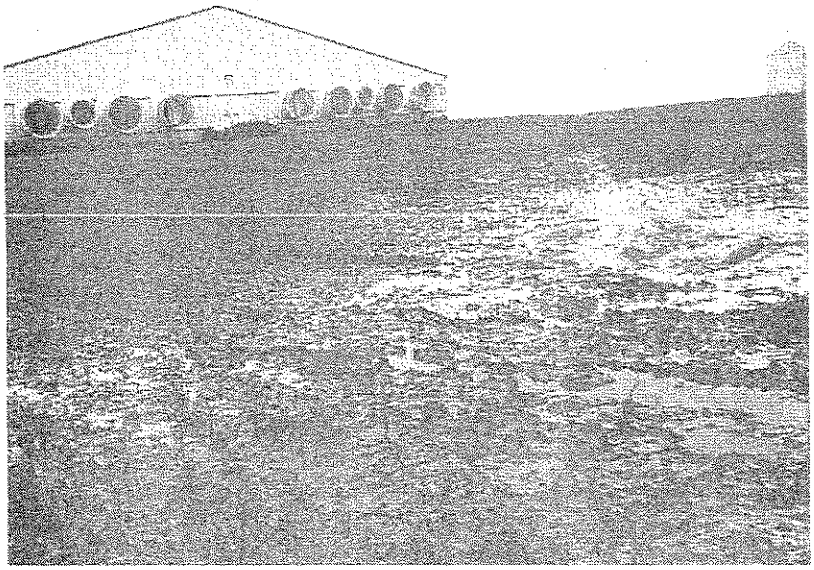
14: 20190619_123725
Description: Flow pathway from a crop field to the fenceline has light brown and white foam and solids on it.
Location: Southwest of the barn on the West Site.
Camera Direction: South and down
Date/Time: June 19, 2019 12:37 p.m.



15: 20190619_123756
Description: Heavy rains in the morning of the inspection saturated the crop field south of the barn on the West Site. EPA observed light brown and white foam and solids in the flow pathway in the crop field at the fenceline.
Location: Southwest of the barn on the West Site.
Camera Direction: Southeast and down
Date/Time: June 19, 2019 12:37 p.m.



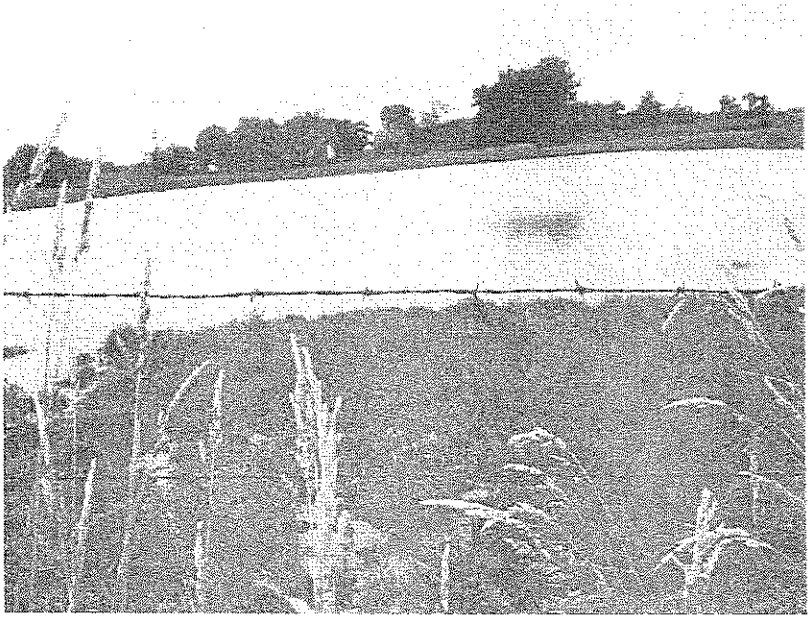
16: 20190619_123759
Description: Red arrow denotes the direction of flow through the crop field from the south side of the barn on the West Site.
Location: Southwest of the barn on the West Site.
Camera Direction: Northeast
Date/Time: June 19, 2019 12:37 p.m.



17: 20190619_123801
Description: The flow of water from the south side of the barn, flows downhill through a crop field and to the fenceline for the cropfield.
Location: Southwest of the barn on the West Site.
Camera Direction: Northeast
Date/Time: June 19, 2019 12:38 p.m.

18: 20190619_123908
Description: Flow channelizes and goes under the fence at the west side of the crop field.
Location: Southwest of the barn on the West Site.
Camera Direction: Down
Date/Time: June 19, 2019 12:39 p.m.

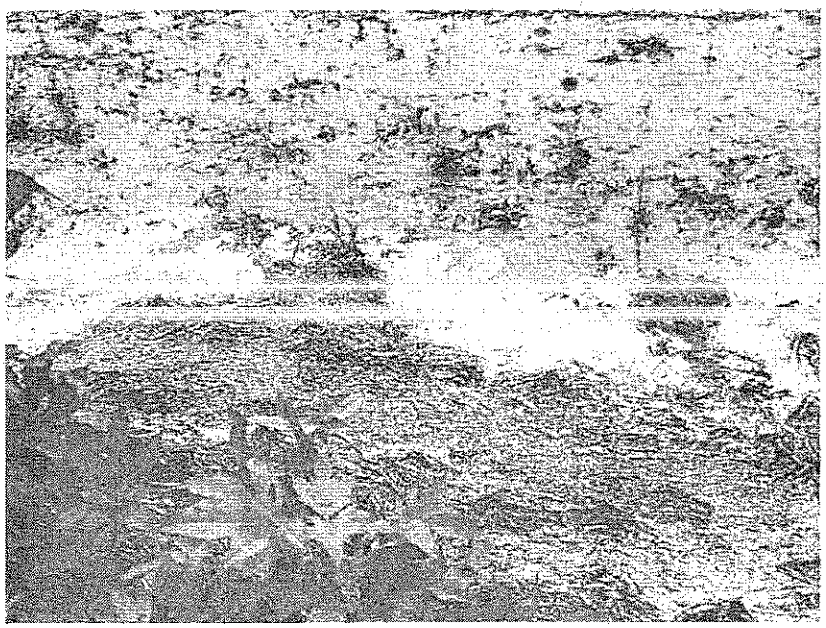
19: 20190619_123915
Description: Flow channelizes and goes under the fence at the west side of the crop field.
Location: Southwest of the barn on the West Site.
Camera Direction: West and down
Date/Time: June 19, 2019 12:39 p.m.



20: 20190619_123917
Description: Flow channelizes and goes under the fence at the west side of the crop field and to a pond.
Location: Southwest of the barn on the West Site.
Camera Direction: West
Date/Time: June 19, 2019 12:39 p.m.

EPA then took sample S02, named "Field Runoff" at 12:47 p.m. from the flow of liquid under the fence and to the pond. EPA walked back to the vehicle and preserved the sample at 12:56 p.m.

21: 20190619_125116
Description: Sample S02, "Field Runoff" was taken at 12:47 p.m. from the flow channel at the fenceline.
Location: Southwest of the barn on the West Site.
Camera Direction: Down
Date/Time: June 19, 2019 12:51 p.m.



22: 20190619_125121
Description: Photo of the light brown and white foam and solids in the flow pathway through the crop field.
Location: Southwest of the barn on the West Site.
Camera Direction: East
Date/Time: June 19, 2019 12:51 p.m.

EPA exited the site at 1:00 p.m. and drove the fecal coliform samples to PDC Laboratories, Inc. in Peoria, Illinois. EPA relinquished the fecal coliform samples to the lab at 3:40 p.m. The other sample bottles were kept on ice and hand delivered to the R5 Central Regional Laboratory on June 20, 2019 at 11:16 a.m.

EPA got a car wash on June 20, 2019 at approximately 10:15 a.m.

ATTACHMENT B

(b) (6) [redacted] SWINE FACILITY

AERIAL MAP OF THE EAST SITE


nonresponsive

ATTACHMENT C

(b) (6) [redacted] SWINE FACILITY

AERIAL MAP OF THE WEST SITE

TOPOGRAPHICAL MAP OF THE WEST SITE


nonresponsive


nonresponsive

ATTACHMENT D

(b) (6) SWINE FACILITY

SAMPLE ANALYSIS

PDC Laboratories, Inc.

PROFESSIONAL • DEPENDABLE • COMMITTED

June 21, 2019

Joan Rogers
US Environmental Protection Agency
77 W Jackson Blvd
Chicago, IL 60604

Dear Joan Rogers:

Please find enclosed the analytical results for the 2 sample(s) the laboratory received on 6/19/19 3:40 pm and logged in under work order 9063702. All testing is performed according to our current TNI accreditations unless otherwise noted. This report cannot be reproduced, except in full, without the written permission of PDC Laboratories, Inc.

If you have any questions regarding your report, please contact your project manager. Quality and timely data is of the utmost importance to us.

PDC Laboratories, Inc. appreciates the opportunity to provide you with analytical expertise. We are always trying to improve our customer service and we welcome you to contact the Director of Client Services, Lisa Grant, with any feedback you have about your experience with our laboratory at 309-683-1764 or lgrant@pdclab.com.

Sincerely,

Kurt Stepping
Senior Project Manager
(309) 692-9688 x1719
kstepping@pdclab.com

ANALYTICAL RESULTS

Sample: 9063702-01
Name: Compost Runoff
Matrix: Waste Water - Grab

Sampled: 06/19/19 11:20
Received: 06/19/19 15:40

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Microbiology - PIA									
Fecal coliform bacteria	173000	MPN/100mL		06/19/19 16:50	100	100	06/19/19 16:50	HAW	SM 9223B - QT

Sample: 9063702-02
Name: Field Runoff
Matrix: Waste Water - Grab

Sampled: 06/19/19 12:42
Received: 06/19/19 15:40

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Microbiology - PIA									
Fecal coliform bacteria	3410	MPN/100mL		06/19/19 16:50	100	100	06/19/19 16:50	HAW	SM 9223B - QT

NOTES

Specific method revisions used for analysis are available upon request.

* Not a TNI accredited analyte

Certifications

CHI - McHenry, IL - 4314 W Crystal Lake Road A, McHenry, IL 60050
TNI Accreditation for Drinking Water, Wastewater, Fields of Testing through IL EPA Lab No. 100279
Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17556

PIA - Peoria, IL - 2231 W Altorfer Drive, Peoria, IL 61615
TNI Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230
Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553
Drinking Water Certifications: Iowa (240); Kansas (E-10388); Missouri (870)
Wastewater Certifications: Arkansas (88-0677); Iowa (240); Kansas (E-10388)
Hazardous/Solid Waste Certifications: Arkansas (88-0677); Iowa (240); Kansas (E-10388)

SPIL - Springfield, IL - 1210 Capitol Airport Drive, Springfield, IL 62707
TNI Accreditation through IL EPA Lab No. 100323

SPMO - Springfield, MO - 1806 W Sunset Street, Springfield, MO 65807
USEPA DMR-QA Program

STL - St. Louis, MO - 3278 N Highway 67, Florissant, MO 63033
TNI Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS Lab No. E-10389
TNI Accreditation for Wastewater, Hazardous, and Solid Waste Analysis through IL EPA No. 200080
Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 171050
Missouri Department of Natural Resources
Microbiological Laboratory Service for Drinking Water

Certified by: Kurt Stepping, Senior Project Manager

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
77 West Jackson Boulevard
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME	Action Code
JR-EPA	(b) (6) (b) (6) Swine Facility	

SAMPLERS: (Print Name and Sign)
Jean Rogers Jean Rogers

9003702-02 DCW

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CON-TAINERS	Analysis: Fecal coliform						TAG NUMBERS
S01	6/19/19	11:20am		X	Compost Runoff	1	X						Need actual count - please
S02	6/19/19	12:47pm		X	Field Runoff	1	X						

Relinquished by: (Signature)	Date / Time	Received by: (Signature)		Ship To:
Relinquished by: (Signature)	Date / Time	Received by: (Signature)		ATTN:
Relinquished by: (Signature) Jean Rogers	Date / Time 6/19/19 15:40	Received for Laboratory by: (Signature)	Date / Time 6/19/19 1540	Airbill Number
				Chain of Custody Seal Numbers

Distribution: White - Accompanies Shipment; Pink - Coordinator Field Files; Yellow - Laboratory File

Printed on Recycled Paper/Printed with Soy Based Ink

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CHICAGO REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: 7/10/2019

Subject: Review of Region 5 Data for (b) (6) Swine Facility

To: Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

From: Francis Awanya, Chemist
US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with the EPA QA/G-8 *Guidance on Environmental Data Verification and Data Validation* and the U.S. EPA Region 5 RMD QMP, CRL performs data verification on all the data generated internally. CRL does not perform data validation or quality assessment procedures.

This report was reviewed and the information provided herein accurately represents the analysis performed.

Francis A Awanya

Please contact the analyst with any technical report issues, Amanda Wroble at (312)-353-0375 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

Attached are Results for: (b) (6) Swine Facility

Analyses included in this report:

Solids, TSS

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: (b) (6) Swine Facility	
77 West Jackson Boulevard	Project Number: JR-EPA	Reported:
Chicago IL, 60604	Project Manager: Jonn Rogers	Jul-10-19 13:13

Accredited Analyses included in this Report

Method: *SM 2540 D in Water*
Analysis: *Solids, TSS*

Analyte	Certifications
Total Suspended Solids	ISO/IEC 17025:2005

Analytes not listed above are not accredited by ANAB.

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2391

Water Division, US EPA Region 5	Project: [redacted] Swine Facility	
77 West Jackson Boulevard	Project Number: JR-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Jul-10-19 15:13

ANALYSIS CASE NARRATIVE

Analysis List
Solids, TSS

Analyst: Francis Awanya
Phone #: (312)886-3682

General Information

Samples analyzed:

Sample	Analysis List
1906009-01	Solids, TSS
1906009-02	Solids, TSS
1906009-03	Solids, TSS

Holding times:
All holding times were met.

Sample Analysis and Results

The samples were analyzed using CRL SOP AJG018, Version # 6. The samples were stored in the refrigerator at all times, except when in use. The data reported herein meets any requirements referenced in the previously mentioned SOP and Sampling QAPP titled "GENERAL FIELD SAMPLING PLAN FOR AFO INSPECTIONS FY 2019" and reporting request for CAFO analyses of June 2018.

SOP Based on:
Method List
SM 2540 D

Quality Control

All quality control audits were within CRL limits or did not result in qualification of the data.

Environmental Protection Agency Region 5

Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

WORK ORDER **Printed: 6/20/2019 4:44:03PM**

1906009

US EPA Region 5 Chicago Regional Laboratory

Client:	Water Division, US EPA Region 5	Project Manager:	Angela Ockrassa Davis
Project:	(b)(6) Swine Facility	Project Number:	JR-EPA

Report To:

Joan Rogers	77 West Jackson Boulevard	Phone: 312-886-2785
Water Division, US EPA Region 5	Chicago, IL 60604	Fax: (312) 886-2001

Date Due:	Aug-05-19 15:00 (46 day TAT)		
Received By:	Robert Snyder	Date Received:	Jun-20-19 11:16
Logged In By:	Robert Snyder	Date Logged In:	Jun-20-19 11:37

Samples Received at:	2.5 °C	**Work Order Comments:**
Sample tags/labels	Yes	pH paper used is SC#18D1901
Seals Intact	Yes	
Received on ice	Yes	
Paperwork Included	Yes	

Sample ID: 1906009-01 **Sampled:** Jun-19-19 11:20 **Matrix:** Water

Sample Name: S01 **Sample Location/Comments:** Compost Runoff

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Jul-17-19 11:20	pH = 1
BOD	2	Jun-21-19 11:20	pH = 6
Nitrate-Nitrite N DA, Enzymatic reduction	28	Jul-17-19 11:20	pH = 1
Solids, TDS	7	Jun-26-19 11:20	pH = 6
Solids, TSS	7	Jun-26-19 11:20	pH = 6
TKN DA	28	Jul-17-19 11:20	pH = 1
Total Phosphorus DA	28	Jul-17-19 11:20	pH = 1

Sample ID: 1906009-02 **Sampled:** Jun-19-19 11:27 **Matrix:** Water

Sample Name: B01 **Sample Location/Comments:** (b)(6)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Jul-17-19 11:27	pH = 1
BOD	2	Jun-21-19 11:27	pH = 6
Nitrate-Nitrite N DA, Enzymatic reduction	28	Jul-17-19 11:27	pH = 1
Solids, TDS	7	Jun-26-19 11:27	pH = 6
Solids, TSS	7	Jun-26-19 11:27	pH = 6

WORK ORDER

Printed: 6/20/2019 4:44:03PM

1906009

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 Project Manager: Angela Ockrassa Davis
Project: (b) (6) Swine Facility Project Number: JR-EPA

Sample ID: 1906009-02 Sampled: Jun-19-19 11:27 Matrix: Water

Sample Name: B01 Sample Location/Comments: (b) (6)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
TKN DA	28	Jul-17-19 11:27	pH = 1
Total Phosphorus DA	28	Jul-17-19 11:27	pH = 1

Sample ID: 1906009-03 Sampled: Jun-19-19 11:47 Matrix: Water

Sample Name: S02 Sample Location/Comments: Field Runoff

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Jul-17-19 11:47	pH = 1
BOD	2	Jun-21-19 11:47	pH = 5
Nitrate-Nitrite N DA, Enzymatic reduction	28	Jul-17-19 11:47	pH = 1
Solids, TDS	7	Jun-26-19 11:47	pH = 5
Solids, TSS	7	Jun-26-19 11:47	pH = 5
TKN DA	28	Jul-17-19 11:47	pH = 1
Total Phosphorus DA	28	Jul-17-19 11:47	pH = 1

REVIEWED
By Amanda Wroble at 4:44 pm, Jun 20, 2019

Reviewed By Date

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ragan Peter Swine Facility	
77 West Jackson Boulevard	Project Number: IR-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Jul-10-19 13:13

Total Suspended Solids, SM 2540 D (modified)
US EPA Region 5 Chicago Regional Laboratory

S01 (1906009-01) Matrix: Water Sampled: Jun-19-19 11:20 Received: Jun-20-19 11:16

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	780		3	5	mg/L	1	B19F017	Jun-25-19	Jun-25-19

B01 (1906009-02) Matrix: Water Sampled: Jun-19-19 11:27 Received: Jun-20-19 11:16

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	U		3	5	mg/L	1	B19F017	Jun-25-19	Jun-25-19

S02 (1906009-03) Matrix: Water Sampled: Jun-19-19 11:47 Received: Jun-20-19 11:16

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	408		3	5	mg/L	1	B19F017	Jun-25-19	Jun-25-19

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8379 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: [redacted] Swine Facility	
77 West Jackson Boulevard	Project Number: JR-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Jul-10-19 13:13

Notes and Definitions

U	Not Detected
NR	Not Reported
Q	QC limit Exceeded

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CHICAGO REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: 7/10/2019

Subject: Review of Region 5 Data for (b) (6) Swine Facility

To: Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

From: Francis Awanya, Chemist
US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with the EPA QA/G-8 *Guidance on Environmental Data Verification and Data Validation* and the U.S. EPA Region 5 RMD QMP, CRL performs data verification on all the data generated internally. CRL does not perform data validation or quality assessment procedures.

This report was reviewed and the information provided herein accurately represents the analysis performed.

Francis A Awanya

Please contact the analyst with any technical report issues, Amanda Wroble at (312)-353-0375 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

Attached are Results for: (b) (6) Swine Facility

Analyses included in this report:

Solids, TDS

Report Name: 1906009 Solids, TDS FINAL Jul 10 19 1259

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: (b) (6) Swine Facility	
77 West Jackson Boulevard	Project Number: JR-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Jul-10-19 12:59

Accredited Analyses included in this Report

Method: *SM 2540 C in Water*
Analysis: *Solids, TDS*

Analyte	Certifications
Total Dissolved Solids	ISO/IEC 17025:2005

Analytes not listed above are not accredited by ANAB.

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: (b) (6) Swine Facility	
77 West Jackson Boulevard	Project Number: JR-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Jul-10-19 12:59

ANALYSIS CASE NARRATIVE

Analysis List
Solids, TDS

Analyst: Francis Awanya
Phone #: (312)886-3682

General Information

Samples analyzed:

Sample	Analysis List
1906009-01	Solids, TDS
1906009-02	Solids, TDS
1906009-03	Solids, TDS

Holding times:
All holding times were met.

Sample Analysis and Results

The samples were analyzed using CRL SOP AIG017, Version # 6. The samples were stored in the refrigerator at all times, except when in use. The data reported herein meets any requirements referenced in the previously mentioned SOP and Sampling QAPP titled "GENERAL FIELD SAMPLING PLAN FOR AFO INSPECTIONS FY 2019" and reporting request for CAFO analyses of June 2014.

SOP Based on:
Method List
SM 2540 C

Quality Control

All quality control audits were within CRL limits or did not result in qualification of the data.

Environmental Protection Agency Region 5

Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

WORK ORDER Printed: 6/20/2019 4:44:03PM

1906009

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 Project Manager: Angela Ockrassa Davis
Project: (b) (6) Swine Facility Project Number: JR-EPA

Report To:

Joan Rogers | 77 West Jackson Boulevard | Phone: 312-886-2785
Water Division, US EPA Region 5 | Chicago, IL 60604 | Fax: (312) 886-2001

Date Due: Aug-05-19 15:00 (46 day TAT)
Received By: Robert Snyder Date Received: Jun-20-19 11:16
Logged In By: Robert Snyder Date Logged In: Jun-20-19 11:37

Samples Received at:	2.5 °C	**Work Order Comments:**
Sample tags/labels	Yes	pH paper used in SC=18D1902
Seals Intact	Yes	
Received on ice	Yes	
Paperwork Included	Yes	

Sample ID: 1906009-01 Sampled: Jun-19-19 11:20 Matrix: Water

Sample Name: S01 Sample Location/Comments: Compost Runoff

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Jul-17-19 11:20	pH = 1
BOD	2	Jun-21-19 11:20	pH = 6
Nitrate-Nitrite N DA, Enzymatic reduction	28	Jul-17-19 11:20	pH = 1
Solids, TDS	7	Jun-26-19 11:20	pH = 6
Solids, TSS	7	Jun-26-19 11:20	pH = 6
TKN DA	28	Jul-17-19 11:20	pH = 1
Total Phosphorus DA	28	Jul-17-19 11:20	pH = 1

Sample ID: 1906009-02 Sampled: Jun-19-19 11:27 Matrix: Water

Sample Name: B01 Sample Location/Comments: (b) (6)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Jul-17-19 11:27	pH = 1
BOD	2	Jun-21-19 11:27	pH = 6
Nitrate-Nitrite N DA, Enzymatic reduction	28	Jul-17-19 11:27	pH = 1
Solids, TDS	7	Jun-26-19 11:27	pH = 6
Solids, TSS	7	Jun-26-19 11:27	pH = 6

WORK ORDER

Printed: 6/20/2019 4:44:03PM

1906009

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5
Project: (b) (6) Swine Facility

Project Manager: Angela Ockrassa Davis
Project Number: JR-EPA

Sample ID: 1906009-02 Sampled: Jun-19-19 11:27 Matrix: Water

Sample Name: B01 Sample Location/Comments: (b) (6)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
TKN DA	28	Jul-17-19 11:27	pH = 1
Total Phosphorus DA	28	Jul-17-19 11:27	pH = 1

Sample ID: 1906009-03 Sampled: Jun-19-19 11:47 Matrix: Water

Sample Name: S02 Sample Location/Comments: Field Runoff

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Jul-17-19 11:47	pH = 1
BOD	2	Jun-21-19 11:47	pH = 6
Nitrate-Nitrite N DA, Enzymatic reduction	28	Jul-17-19 11:47	pH = 1
Solids, TDS	7	Jun-26-19 11:47	pH = 6
Solids, TSS	7	Jun-26-19 11:47	pH = 6
TKN DA	28	Jul-17-19 11:47	pH = 1
Total Phosphorus DA	28	Jul-17-19 11:47	pH = 1

REVIEWED
By Amanda Wroble at 4:44 pm, Jun 20, 2019

Reviewed By Date

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: (b)(6) Swine Facility	
77 West Jackson Boulevard	Project Number: JR-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Jul-10-19 12:59

Dissolved Solids, SM 2540C (modified)

US EPA Region 5 Chicago Regional Laboratory

S01 (1906009-01) Matrix: Water Sampled: Jun-19-19 11:20 Received: Jun-20-19 11:16

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	380		16.0	20.0	mg/L	1	B19F018	Jun-25-19	Jun-25-19

B01 (1906009-02) Matrix: Water Sampled: Jun-19-19 11:27 Received: Jun-20-19 11:16

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	U		16.0	20.0	mg/L	1	B19F018	Jun-25-19	Jun-25-19

S02 (1906009-03) Matrix: Water Sampled: Jun-19-19 11:47 Received: Jun-20-19 11:16

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	258		16.0	20.0	mg/L	1	B19F018	Jun-25-19	Jun-25-19

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8570 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: (b)(6) Swine Facility	
77 West Jackson Boulevard	Project Number: JR-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Jul-10-19 12:59

Notes and Definitions

U	Not Detected
NR	Not Reported
Q	QC limit Exceeded

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5 CHICAGO REGIONAL LABORATORY
536 SOUTH CLARK STREET
CHICAGO, ILLINOIS 60605

Date: 7/18/2019

Subject: Review of Region 5 Data for (b) (6) Swine Facility

To: Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

From: Edgar Santiago, Analyst
US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with the EPA QA/G-8 *Guidance on Environmental Data Verification and Data Validation* and the U.S. EPA Region 5 RMD QMP, CRL performs data verification on all the data generated internally. CRL does not perform data validation or quality assessment procedures.

This report was reviewed and the information provided herein accurately represents the analysis performed.

Please contact the analyst with any technical report issues, Amando Wrobie at (312)-353-0375 for sample project concerns, and Sylvia Griffin at (312)-553-9073 with data transmittal questions. Thank you.

Attached are Results for: (b) (6) Swine Facility

Analyses included in this report:

BOD

Report Name: 1906009 BOD FINAL Jul 18 19 0959

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: (b) (6) Swine Facility	
77 West Jackson Boulevard	Project Number: JR-EPA	Reported:
Chicago IL, 60604	Project Manager: Jean Rogers	Jul-18-19 09:59

Accredited Analyses included in this Report

Method: *SM 5210 B in Water*
Analysis: *BOD*

Analyte	Certifications
Biochemical Oxygen Demand	ISO/IEC 17025:2005

Analytes not listed above are not accredited by ANAB.

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: (b)(6) Swine Facility	
77 West Jackson Boulevard	Project Number: JR-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Jul-18-19 09:59

ANALYSIS CASE NARRATIVE
Analyst Phone Number: 312-353-5521

GENERAL INFORMATION:

Three water samples collected for 5-day biochemical oxygen demand (BOD5) analyses was received at the Analytical Services Branch (ASB) on 06/20/2019 and assigned WO# 1906009. The samples met the temperature preservation requirement of less than or equal to 6 °C. The samples were analyzed within the 48-hour hold time. The designated analyst, Edgar Santiago, can be reached at 312-353-5521.

The samples were prepared and analyzed for BOD5 using ASB Standard Operating Procedure AIG006A: Version 5.

SAMPLE ANALYSIS:

The data reported herein meets the requirements referenced in the SOP used for analysis and any laboratory specifications stated in the General Field Sampling Plan for AFO Inspections, dated FY 2019. ASB reporting limit requirements were met.

The result for sample number 1906009-01 was flagged K - The identification of the analyte is acceptable; the reported value may be biased high. The actual value is expected to be less than the reported value.

Sample numbers' 1906009-02 and 1906009-03 did not have a valid DO depletion of at least 2 mg/L across the dilution series that was tested. This was likely due to little or no demand in the samples. The results were above the reporting limit and flagged K- The identification of the analyte is acceptable; the reported value may be biased high. The actual value is expected to be less than the reported value.

See quality control section for an explanation of the estimated flags.

QUALITY CONTROL (QC):

All required quality control criteria for the laboratory, method, and system performance audits were evaluated and determined to be within ASBs QC limits with the following exceptions:

Preparation Blanks (BLK) and Calibration Checks:
One out of the two preparation blanks (BLK) was slightly outside of the QC limit of +/- 0.20 mg/L at -0.27 mg/L. The calibration checks bracketing the samples on the final day of readings drifted out of the tolerance of +/- 0.20 mg/L from the expected DO. The greatest drift was at -0.51 mg/L from the expected DO. The drift in the meter calibration caused the results to be flagged with a potential high bias as mentioned above.

Environmental Protection Agency Region 5

Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

WORK ORDER

Printed: 6/20/2019 4:44:03PM

1906009

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5
Project: (b) (6) Swine Facility
Project Manager: Angela Ockrassa Davis
Project Number: JR-EPA

Report To:

Joan Rogers	77 West Jackson Boulevard	Phone: 312-886-2785
Water Division, US EPA Region 5	Chicago, IL 60604	Fax: (312) 886-2001

Date Due: Aug-05-19 15:00 (46 day TAT)
Received By: Robert Snyder
Date Received: Jun-20-19 11:16
Logged In By: Robert Snyder
Date Logged In: Jun-20-19 11:37

Samples Received at:	2.5 °C
Sample tags/labels:	Yes
Seals Intact	Yes
Received on ice	Yes
Paperwork Included	Yes

Work Order Comments:
pH paper used in SC=1SD190

Sample ID: 1906009-01 Sampled: Jun-19-19 11:20 Matrix: Water

Sample Name: S01 Sample Location/Comments: Compost Runoff

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Jul-17-19 11:20	pH = 1
BOD	2	Jun-21-19 11:20	pH = 6
Nitrate-Nitrite N DA, Enzymatic reduction	28	Jul-17-19 11:20	pH = 1
Solids, TDS	7	Jun-26-19 11:20	pH = 6
Solids, TSS	7	Jun-26-19 11:20	pH = 6
TKN DA	28	Jul-17-19 11:20	pH = 1
Total Phosphorus DA	28	Jul-17-19 11:20	pH = 1

Sample ID: 1906009-02 Sampled: Jun-19-19 11:27 Matrix: Water

Sample Name: B01 Sample Location/Comments: (b) (6)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Jul-17-19 11:27	pH = 1
BOD	2	Jun-21-19 11:27	pH = 4
Nitrate-Nitrite N DA, Enzymatic reduction	28	Jul-17-19 11:27	pH = 1
Solids, TDS	7	Jun-26-19 11:27	pH = 4
Solids, TSS	7	Jun-26-19 11:27	pH = 4

WORK ORDER

Printed: 6/20/2019 4:44:05PM

1906009

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 Project Manager: Angela Ockrassa Davis
Project: [redacted] Swine Facility Project Number: JR-EPA

Sample ID: 1906009-02 Sampled: Jun-19-19 11:27 Matrix: Water

Sample Name: B01 Sample Location/Comments: Ragan Peter

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
TKN DA	28	Jul-17-19 11:27	pH = 1
Total Phosphorus DA	28	Jul-17-19 11:27	pH = 1

Sample ID: 1906009-03 Sampled: Jun-19-19 11:47 Matrix: Water

Sample Name: S02 Sample Location/Comments: Field Runoff

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Jul-17-19 11:47	pH = 1
BOD	2	Jun-21-19 11:47	pH = 5
Nitrate-Nitrite N DA, Enzymatic reduction	28	Jul-17-19 11:47	pH = 1
Solids, TDS	7	Jun-26-19 11:47	pH = 5
Solids, TSS	7	Jun-26-19 11:47	pH = 5
TKN DA	28	Jul-17-19 11:47	pH =
Total Phosphorus DA	28	Jul-17-19 11:47	pH = 1

REVIEWED
By Amanda Wroble at 4:44 pm, Jun 20, 2019

Reviewed By Date

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: (b)(6) Swine Facility	
77 West Jackson Boulevard	Project Number: IR-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Jul-18-19 09:59

BOD, 5 day, SM 5210 B (modified)

US EPA Region 5 Chicago Regional Laboratory

S01 (1906009-01) Matrix: Water Sampled: Jun-19-19 11:20 Received: Jun-20-19 11:16

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	120	K		2	mg/L	1	B19F016	Jun-20-19	Jun-26-19

B01 (1906009-02) Matrix: Water Sampled: Jun-19-19 11:27 Received: Jun-20-19 11:16

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	3	K		2	mg/L	1	B19F016	Jun-20-19	Jun-26-19

S02 (1906009-03) Matrix: Water Sampled: Jun-19-19 11:47 Received: Jun-20-19 11:16

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	7	K		2	mg/L	1	B19F016	Jun-20-19	Jun-26-19

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: (b)(6) Swine Facility	
77 West Jackson Boulevard	Project Number: JR-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Jul-18-19 09:58

Notes and Definitions

K	The identification of the analyte is acceptable; the reported value may be biased high. The actual value is expected to be less than the reported value.
U	Not Detected
NR	Not Reported
Q	QC limit Exceeded

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CHICAGO REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: 7/18/2019

Subject: Review of Region 5 Data for (b) (6) Swine Facility

To: Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

From: Anna Knoebel, Chemist
US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with the EPA QA/G-8 *Guidance on Environmental Data Verification and Data Validation* and the U.S. EPA Region 5 RMD QMP, CRL performs data verification on all the data generated internally. CRL does not perform data validation or quality assessment procedures.

This report was reviewed and the information provided herein accurately represents the analysis performed.

Please contact the analyst with any technical report issues, Amando Wrable at (312)-353-0375 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

Attached are Results for: (b) (6) Swine Facility

Analyses included in this report:

Nitrate-Nitrite N DA, Enzymatic reduction

Report Name: 1906008 Nitrate-Nitrite N DA, Enzymatic reduction FINAL Jul 18 19 1349

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2391

Water Division, US EPA Region 5	Project: (b) (6) Swine Facility	
77 West Jackson Boulevard	Project Number: JR-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Jul-18-19 13:49

Accredited Analyses included in this Report

Method: *NECI Method NO7-0003 in Water*
Analysis: *Nitrate-Nitrite N DA, Enzymatic reduction*

Analyte	Certifications
Nitrate-Nitrite N	ISO/IEC 17025:2005

Analytes not listed above are not accredited by ANAB.

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: (b) (6) Swine Facility	
77 West Jackson Boulevard	Project Number: IR-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Jul-18-19 13:49

ANALYSIS CASE NARRATIVE

Analysis List

Nitrate-Nitrite N DA, Enzymatic reduction

Analyst: Anna Knoebel
Phone #: 312-353-9467

General Information

Samples analyzed:

Sample	Analysis List
1906009-01	Nitrate-Nitrite N DA, Enzymatic reduction
1906009-02	Nitrate-Nitrite N DA, Enzymatic reduction
1906009-03	Nitrate-Nitrite N DA, Enzymatic reduction

Holding times:

All holding times were met.

Sample Analysis and Results

The samples were analyzed using CRL SOP AIG031B, Version #5. The samples were stored in the refrigerator at all times, except when in use. The data reported herein meets any requirements referenced in the previously mentioned SOP and Sampling QAPP titled "GENERAL FIELD SAMPLING PLAN FOR AFO INSPECTIONS FY 2019" and reporting request for CAFO analyses of June 2014.

SOP Based on:

Method List

NECi Method NO7-0003

Quality Control

All quality control audits were within CRL limits or did not result in qualification of the data except for any listed below.

B19G012-MS1 *Source Sample: 1906009-01 - [S01]*

Recovery for Nitrate-Nitrite N (95%) was outside acceptance limits (90-110%).

The spike was diluted out, no qualifiers were necessary.

Environmental Protection Agency Region 5

Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

WORK ORDER

Printed: 6/20/2019 4:44:03PM

1906009

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5
Project: (b) (6) Swine Facility
Project Manager: Angela Ockrassa Davis
Project Number: JR-EPA

Report To:

Joan Rogers
Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604
Phone: 312-886-2785
Fax: (312) 886-2001

Date Due: Aug-05-19 15:00 (46 day TAT)
Received By: Robert Snyder
Logged In By: Robert Snyder
Date Received: Jun-20-19 11:16
Date Logged In: Jun-20-19 11:37

Samples Received at	2.5 °C
Sample tags/labels	Yes
Seals Intact	Yes
Received on Ice	Yes
Paperwork Included	Yes

Work Order Comments:
pH paper used is SC=18D1991

Sample ID: 1906009-01 Sampled: Jun-19-19 11:26 Matrix: Water

Sample Name: S01 Sample Location/Comments: Compost Runoff

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Jul-17-19 11:20	pH = 1
BOD	2	Jun-21-19 11:20	pH = 6
Nitrate-Nitrite N DA, Enzymatic reduction	28	Jul-17-19 11:20	pH = 1
Solids, TDS	7	Jun-26-19 11:20	pH = 6
Solids, TSS	7	Jun-26-19 11:20	pH = 6
TKN DA	28	Jul-17-19 11:20	pH = 1
Total Phosphorus DA	28	Jul-17-19 11:20	pH = 1

Sample ID: 1906009-02 Sampled: Jun-19-19 11:27 Matrix: Water

Sample Name: B01 Sample Location/Comments: (b) (6)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Jul-17-19 11:27	pH = 1
BOD	2	Jun-21-19 11:27	pH = 4
Nitrate-Nitrite N DA, Enzymatic reduction	28	Jul-17-19 11:27	pH = 1
Solids, TDS	7	Jun-26-19 11:27	pH = 4
Solids, TSS	7	Jun-26-19 11:27	pH = 4

WORK ORDER

Printed: 6/20/2019 4:44:03PM

1906009

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5 Project Manager: Angela Ockrassa Davis
Project: (b) (6) Swine Facility Project Number: JR-EPA

Sample ID: 1906009-02 Sampled: Jun-19-19 11:27 Matrix: Water

Sample Name: B01 Sample Location/Comments: (b) (6)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
TKN DA	28	Jul-17-19 11:27	pH = 1
Total Phosphorus DA	28	Jul-17-19 11:27	pH = 1

Sample ID: 1906009-03 Sampled: Jun-19-19 11:47 Matrix: Water

Sample Name: S02 Sample Location/Comments: Field Runoff

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Jul-17-19 11:47	pH = 1
BOD	2	Jun-21-19 11:47	pH = 5
Nitrate-Nitrite N DA, Enzymatic reduction	28	Jul-17-19 11:47	pH = 1
Solids, TDS	7	Jun-26-19 11:47	pH = 5
Solids, TSS	7	Jun-26-19 11:47	pH = 5
TKN DA	28	Jul-17-19 11:47	pH = 1
Total Phosphorus DA	28	Jul-17-19 11:47	pH = 1

REVIEWED
By Amanda Wroble at 4:44 pm, Jun 20, 2019

Reviewed By Date

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: (b) (6) Swine Facility	
77 West Jackson Boulevard	Project Number: JR-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Jul-18-19 13:49

Nitrate-Nitrite Nitrogen, Nitrate Reductase, NECi Method N07-0003 (modified)

US EPA Region 5 Chicago Regional Laboratory

S01 (1906009-01) Matrix: Water Sampled: Jun-19-19 11:20 Received: Jun-20-19 11:16

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	20.6		0.50	1.00	mg/L	10	B190602	Jul-16-19	Jul-11-19

B01 (1906009-02) Matrix: Water Sampled: Jun-19-19 11:27 Received: Jun-20-19 11:16

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	U	U	0.05	0.10	mg/L	1	B190602	Jul-16-19	Jul-11-19

S02 (1906009-03) Matrix: Water Sampled: Jun-19-19 11:47 Received: Jun-20-19 11:16

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	14.2		0.50	1.00	mg/L	10	B190602	Jul-16-19	Jul-11-19

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: (b)(6) Swine Facility	
77 West Jackson Boulevard	Project Number: JR-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Jul-18-19 13:49

Notes and Definitions

J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Not Detected
NR	Not Reported
Q	QC limit Exceeded

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CHICAGO REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: 8/7/2019

Subject: Review of Region 5 Data for (b) (6) Swine Facility

To: Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

From: Nidia Fuentes, Chemist
US EPA Region 5 LSASD Analytical Service Branch

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with the EPA QA/G-8 *Guidance on Environmental Data Verification and Data Validation* and the U.S. EPA Region 5 RMD QMP, CRL performs data verification on all the data generated internally. CRL does not perform data validation or quality assessment procedures.

This report was reviewed and the information provided herein accurately represents the analysis performed

Nidia Fuentes

Please contact the analyst with any technical report issues, Amanda Wroble at (312)-353-0375 for sample project concerns, and Sylvia Griffin at (312)-353-9075 with data transmittal questions. Thank you.

Attached are Results for: (b) (6) Swine Facility

Analyses included in this report:

Ammonia N DA, Distilled	TKN DA	Total Phosphorus DA

Report Name: 1906005 Ammonia N DA, Distilled TKN DA Total Phosphorus DA FINAL Aug 07 19 0850

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: (b)(6) Swine Facility	
77 West Jackson Boulevard	Project Number: JR-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Aug-07-19 08:50

Accredited Analyses included in this Report

Method: *EPA 351.2 in Water*
Analysis: *TKN DA*

Analyte	Certifications
Total Kjeldahl Nitrogen	ISO/IEC 17025:2005

Method: *EPA 365.4 in Water*
Analysis: *Total Phosphorus DA*

Analyte	Certifications
Total Phosphorus	ISO/IEC 17025:2005

Method: *SM 4500-H+ B in Water*
Analysis: *Ammonia N DA, Distilled*

Analyte	Certifications
Ammonia as N	ISO/IEC 17025:2005

Analytes not listed above are not accredited by ANAB.

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: [redacted] Swine Facility	
77 West Jackson Boulevard	Project Number: JR-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Aug-07-19 08:50

ANALYSIS CASE NARRATIVE

Analysis List

Total Phosphorus DA

Analyst: Nidia Fuentes
Phone #: 312-353-9079

General Information

Samples analyzed:

Sample	Analysis List
1906009-01	Total Phosphorus DA
1906009-02	Total Phosphorus DA
1906009-03	Total Phosphorus DA

Holding times:

All holding times were met.

Sample Analysis and Results

The samples were analyzed using CRL SOP AIG034B, Version #6. The samples were stored in the refrigerator at all times, except when in use. The data reported herein meets any requirements referenced in the previously mentioned SOP and Sampling QAPP titled "GENERAL FIELD SAMPLING PLAN FOR AFO INSPECTIONS FY 2019" and reporting request for CAFO analyses of June 2014, except for those listed in the Quality Control section.

SOP Based on:

Method List

EPA 365.4

Quality Control

All quality control audits were within CRL limits or did not result in qualification of the data except for any listed below.

Sample 1906009-01 spike recovery was outside the QC limits of 79% to 124% due to the spike being diluted out. The recovery is invalid and no flag apply

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: (b)(6) Swine Facility	
77 West Jackson Boulevard	Project Number: IR-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Aug-07-19 08:50

ANALYSIS CASE NARRATIVE

Analysis List
TKN DA

Analyst: Nidia Fuentes
Phone #: 312-353-9079

General Information

Samples analyzed:

Sample	Analysis List
1906009-01	TKN DA
1906009-02	TKN DA
1906009-03	TKN DA

Holding times:
All holding times were met.

Sample Analysis and Results

The samples were analyzed using CRL SOP AIG035B, Version #8. The samples were stored in the refrigerator at all times, except when in use. The data reported herein meets any requirements referenced in the previously mentioned SOP and Sampling QAPP titled "GENERAL FIELD SAMPLING PLAN FOR AFO INSPECTIONS FY 2019" and reporting request for CAFO analyses of June 2014, except for those listed in the Quality Control section.

The analysis of samples at the instrument started on July 11, 2019. QC data for BLK, BS and MRL recoveries were outside the QC limits. An elevated detection limit was observed on the calibration intercept. Reanalysis of sample was done on July15, 2019 and July 17, 2019. In the end, the data from July15, 2019 was used since it provided the least amount of qualified data and because the samples expired on July 17, 2019.

SOP Based on:
Method List
EPA 351.2

Quality Control

All quality control audits were within CRL limits except for, method blank (BLK), blank spike (BS), and matrix spike (MS) listed below.

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2593

Water Division, US EPA Region 5	Project: (b) (6) Swine Facility	
77 West Jackson Boulevard	Project Number: JR-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Aug-07-19 08:50

The BS (83%) recovery exceeded the QC limit of 90% to 110%. Detected samples were flagged "L" meaning: the identification of the analyte is acceptable; the reported value may be biased low. The actual value is expected to be greater than the reported value. Non-detect samples were flagged "UJ" meaning: the analyte was not detected at or above the reported limit. The reported limit is an estimate.

The BLK (0.83 mg/L) exceeded the QC limit of 0.3 mg/L. No additional flags were applied to the samples on this basis.

The spike recovery (68%) for sample 1906009-01 (S01) failed the QC limit. the sample was diluted causing spike to be diluted out, no additional flags were necessary.

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Chicago Regional Laboratory

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Water Division, US EPA Region 5	Project: (b)(6) Swine Facility	
77 West Jackson Boulevard	Project Number: JR-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Aug-07-19 08:50

ANALYSIS CASE NARRATIVE

Analysis List

Ammonia N DA, Distilled

Analyst: Nidia Fuentes
Phone #: 312-353-9079

General Information

Samples analyzed:

Sample	Analysis List
1906009-01	Ammonia N DA, Distilled
1906009-02	Ammonia N DA, Distilled
1906009-03	Ammonia N DA, Distilled

Holding times:

All holding times were met.

Sample Analysis and Results

The samples were analyzed using CRL SOP AJG029B, Version #6. The samples were stored in the refrigerator at all times, except when in use. The data reported herein meets any requirements referenced in the previously mentioned SOP and Sampling QAPP titled "GENERAL FIELD SAMPLING PLAN FOR AFO INSPECTIONS FY 2019" and reporting request for CAFO analyses of June 2014, except for those listed in the Quality Control section.

The analysis of samples at the instrument started on July 16, 2019. QC data for the instrument blanks (ICB, CCBs) and MRL recoveries were outside the QC limits. An elevated detection limit was observed on the calibration intercept. Samples were reanalyzed on July 17, 2019. In the end, the data from July 17, 2019 was used because the samples expired on July 17, 2019. The date is qualified accordingly based on the high ICB/CCB data as listed in the quality control section.

SOP Based on:

Method List
SM 4500-H+ B

Quality Control

All quality control audits were within CRL limits or did not result in qualification of the data except for the initial and continuing calibration blanks (ICB/CCBs).

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Water Division, US EPA Region 6	Project: (b) (6) Swine Facility	
77 West Jackson Boulevard	Project Number: 7R-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Aug-07-19 08:50

The ICB and CCB results (0.8 - 0.10 mg/L) exceeded the QC limits of 0.07 mg/L. As a result sample 1906009-03 was qualified "J." The other samples were not qualified because they were either non-detect or more than 10 times the ICB/CCB results.

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WORK ORDER

1906009

Printed: 6/20/2019 4:44:03PM

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5
Project: (b) (6) Swine Facility

Project Manager: Angela Ockrassa Davis
Project Number: JR-EPA

Report To:

Joan Rogers
Water Division, US EPA Region 5

77 West Jackson Boulevard
Chicago, IL 60604

Phone: 312-886-2785
Fax: (312) 886-2001

Date Due: Aug-05-19 15:00 (46 day TAT)
Received By: Robert Snyder
Logged In By: Robert Snyder

Date Received: Jun-20-19 11:16
Date Logged In: Jun-20-19 11:37

Samples Received at:	2.5 °C
Sample tags/labels:	Yes
Seals Intact:	Yes
Received on ice:	Yes
Paperwork included:	Yes

Work Order Comments:
pH paper used in SC-1&D1901

Sample ID: 1906009-01 Sampled: Jun-19-19 11:20 Matrix: Water

Sample Name: S01 Sample Location/Comments: Compost Runoff

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Jul-17-19 11:20	pH = 1
BOD	2	Jun-21-19 11:20	pH = 6
Nitrate-Nitrite N DA, Enzymatic reduction	28	Jul-17-19 11:20	pH = 1
Solids, TDS	7	Jun-26-19 11:20	pH = 6
Solids, TSS	7	Jun-26-19 11:20	pH = 6
TKN DA	28	Jul-17-19 11:20	pH = 1
Total Phosphorus DA	28	Jul-17-19 11:20	pH = 1

Sample ID: 1906009-02 Sampled: Jun-19-19 11:27 Matrix: Water

Sample Name: B01 Sample Location/Comments: (b) (6)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Jul-17-19 11:27	pH = 1
BOD	2	Jun-21-19 11:27	pH = 4
Nitrate-Nitrite N DA, Enzymatic reduction	28	Jul-17-19 11:27	pH = 1
Solids, TDS	7	Jun-26-19 11:27	pH = 4
Solids, TSS	7	Jun-26-19 11:27	pH = 4

WORK ORDER

Printed: 6/20/2019 4:44:03PM

1906009

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, US EPA Region 5
Project: (b) (6) Swine Facility

Project Manager: Angela Ockrassa Davis
Project Number: JR-EPA

Sample ID: 1906009-02 Sampled: Jun-19-19 11:27 Matrix: Water

Sample Name: B01 Sample Location/Comments: (b) (6)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
TKN DA	28	Jul-17-19 11:27	pH = 1
Total Phosphorus DA	28	Jul-17-19 11:27	pH = 1

Sample ID: 1906009-03 Sampled: Jun-19-19 11:47 Matrix: Water

Sample Name: S02 Sample Location/Comments: Field Runoff

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	Jul-17-19 11:47	pH = 1
BOD	2	Jun-21-19 11:47	pH = 5
Nitrate-Nitrite N DA, Enzymatic reduction	28	Jul-17-19 11:47	pH = 1
Solids, TDS	7	Jun-26-19 11:47	pH = 5
Solids, TSS	7	Jun-26-19 11:47	pH = 5
TKN DA	28	Jul-17-19 11:47	pH = 1
Total Phosphorus DA	28	Jul-17-19 11:47	pH = 1

REVIEWED
By Amanda Wroble at 4:44 pm, Jun 20, 2019

Reviewed By Date

Environmental Protection Agency Region 5
Chicago Regional Laboratory

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Water Division, US EPA Region 5	Project: (b) (6) Swine Facility	
77 West Jackson Boulevard	Project Number: JR-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Aug-07-19 08:50

Phosphorus, Colorimetric, EPA 365.4 (modified)

US EPA Region 5 LSASD Analytical Service Branch

S01 (1906009-01) Matrix: Water Sampled: Jun-19-19 11:20 Received: Jun-20-19 11:16

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	3.33		0.40	1.58	mg/L	10	B19G009	Jul-09-19	Jul-11-19

B01 (1906009-02) Matrix: Water Sampled: Jun-19-19 11:27 Received: Jun-20-19 11:16

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	0		0.04	0.15	mg/L	1	B19G009	Jul-09-19	Jul-11-19

S02 (1906009-03) Matrix: Water Sampled: Jun-19-19 11:47 Received: Jun-20-19 11:16

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	0.92		0.04	0.15	mg/L	1	B19G009	Jul-09-19	Jul-11-19

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Water Division, US EPA Region 5	Project (b) (6) Swine Facility	
77 West Jackson Boulevard	Project Number: JR-EPA	Reported:
Chicago IL, 60604	Project Manager: John Rogers	Aug-07-19 08:50

Total Kjeldahl Nitrogen, EPA 351.2 (modified)

US EPA Region 5 LSASD Analytical Service Branch

S01 (1906009-01) Matrix: Water Sampled: Jun-19-19 11:20 Received: Jun-20-19 11:16

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	26.6	L	3.00	5.00	mg/L	10	B19G030	Jul-09-19	Jul-15-19

B01 (1906009-02) Matrix: Water Sampled: Jun-19-19 11:27 Received: Jun-20-19 11:16

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	U	UJ	0.30	0.50	mg/L	1	B19G030	Jul-09-19	Jul-15-19

S02 (1906009-03) Matrix: Water Sampled: Jun-19-19 11:47 Received: Jun-20-19 11:16

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	4.75	J	0.30	0.50	mg/L	1	B19G030	Jul-09-19	Jul-15-19

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Water Division, US EPA Region 5	Project: (b) (6) Swine Facility	
77 West Jackson Boulevard	Project Number: JR-EPA	**Reported:**
Chicago IL, 60604	Project Manager: Jose Rogers	Aug-07-19 08:50

Ammonia Nitrogen, SM4500B & H (modified)

US EPA Region 5 LSASD Analytical Service Branch

S01 (1906009-01) **Matrix: Water** **Sampled: Jun-19-19 11:20** **Received: Jun-20-19 11:16**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	13.3		1.80	3.00	mg/L	10	B190620	Jul-16-19	Jul-17-19

B01 (1906009-02) **Matrix: Water** **Sampled: Jun-19-19 11:27** **Received: Jun-20-19 11:16**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	U		0.18	0.30	mg/L	1	B190620	Jul-16-19	Jul-17-19

S02 (1906009-03) **Matrix: Water** **Sampled: Jun-19-19 11:47** **Received: Jun-20-19 11:16**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	0.29	J	0.18	0.30	mg/L	1	B190620	Jul-16-19	Jul-17-19

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Water Division, US EPA Region 5	Project: (b) (6) Swine Facility	
77 West Jackson Boulevard	Project Number: JR-EPA	Reported:
Chicago IL, 60604	Project Manager: Joan Rogers	Aug-07-19 08:50

Notes and Definitions

UJ	The analyte was not detected at or above the reported limit. The reported limit is an estimate
L	The identification of the analyte is acceptable; the reported value may be biased low. The actual value is expected to be greater than the reported value.
J	The identification of the analyte is acceptable; the reported value is an estimate.
*	This Quality Control measure meets the requirements of the CRL SOP for this analyte
U	Not Detected
NR	Not Reported
Q	QC limit Exceeded